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10/555,721

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EXAMINER

ZETTL, MARY E

ART UNIT

PAPER NUMBER

2875

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/555,721	Applicant(s) BOHLER ET AL.	
	Examiner MARY ZETTL	Art Unit 2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/25/06 and 7/2/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 2, 14, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harbers (US 6,586,882 B1) in view of Bowman et al. (US 2003/0076051 A1).

Regarding claim 1, Harbers teaches a light source comprising: a light engine for generating light of one of a plurality of wavelengths, the light engine including: a platform (portion upon which item 2 rests; Figure 1), and at least one LED (2) disposed on the platform (portion upon which item 2 rests; Figure 1); an enclosure (5) surrounding a light generating area of the light engine (Figure 1); a base (7) including a heat sink (col. 7, lines 5-8) for conducting thermal energy away from the at least one LED (2), into which heat sink the light engine is mounted (Figure 1).

Harbers does not disclose expressly conversion circuits for supplying electric power to the light engine.

Bowman et al. teaches an LED module including a conversion circuit for supplying electric power to the light engine (paragraph 7).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to have provided a conversion circuit in the invention of Harbers

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as taught by Bowman et al. for the purpose of providing the desired voltage to the LEDs.

Regarding claim 2, Harbers teaches a luminescent converting element (3) to receive the light generated by the light engine (2) and convert at least some of the received light to visible light (Abstract).

Regarding claim 14, Harbers teaches the base (7) is adapted for mating with the light engine (LED driving section; Figure 1).

Regarding claim 20, Harbers and Bowman et al. does not disclose expressly a substantially transparent enclosure of a variety of shapes.

According to *In re Seid* , 161 F.2d 229, 73 USPQ 431 (CCPA 1947) matters relating to ornamentation only which have no mechanical function cannot be relied upon to patentably distinguish the claimed invention from the prior art.

It would have been obvious to one of ordinary skill in the art to have modified the invention of Harbers and Bowman et al. such that a variety of shapes were available for the enclosure as a means for increasing consumer appeal by enhancing the decorative effect.

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2. Claims 3-7, 9-13, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harbers (US 6,586,882 B1) and Bowman et al. (US 2003/0076051 A1) and further in view of Guy (US 2005/0207177 A1).

Regarding claim 3, Harbers and Bowman et al. do not disclose expressly a light guide.

Guy teaches an LED illuminating source including a light guide (Abstract and paragraph 29).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to have modified the invention of Harbers and Bowman et al. such that a light guide as taught by Guy was utilized to produce the desired lighting effect.

Regarding claim 4, Harbers teaches a luminescent converting element (3) being adjacent to the at least one LED (2; Figure 1).

Regarding claim 5, Harbers teaches a light bulb including a wire (1 and 3) providing an appearance of a filament (Figure 1).

Harbers and Bowman et al. do not disclose expressly a light guide.

Guy teaches an LED illuminating source including a light guide (Abstract and paragraph 29).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to have modified the invention of Harbers and Bowman et al.

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such that a light guide as taught by Guy was utilized to produce the desired lighting effect.

Regarding claim 6, Harbers and Bowman et al. do not disclose expressly the light guide (1) comprising an optical fiber with one of internal diffusers, external diffusers, and other frustrated TIR (Total Internal Reflection) features to allow the light to escape at preselected locations.

Guy teaches the light guide comprising an optical fiber with one of internal diffusers, external diffusers, and other frustrated TIR (Total Internal Reflection) features to allow the light to escape at preselected locations (claim 32).

Regarding claim 7, Harbers and Bowman et al. do not disclose expressly the light guide comprising a reflector.

Guy teaches the light guide comprising a reflector (paragraph 30).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to have modified the invention of Harbers and Bowman et al. as taught by Guy such that the light guide comprised a reflector in order to increase the light output. Regarding claim 10, Harbers teaches a luminescent converting element (3) being disposed on or in the enclosure (5).

Regarding claims 9 and 10, Harbers teaches the use of a luminescent converting element (3).

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Harbers and Bowman et al. does not disclose expressly the luminescent converting element being disposed on or within the light guide (1).

Guy teaches the light guide coating being disposed on or within the light guide (paragraph 30).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to have disposed the luminescent converting element of Harbers and Bowman on or within a light guide such as that taught by Guy since providing a coating on or within a light guide will provide the desired optical effect.

Regarding claim 11, Harbers teaches the luminescent converting element (3) including a transparent phosphor (col. 2, lines 34-36).

Regarding claim 12, Harbers teaches the transparent phosphor comprises one of: an organic phosphor, an organic complex of a rare earth metal, a nanophosphor, and a quantum dot phosphor (col. 2, lines 34-36).

Regarding claim 13, Harbers teaches a light source further comprising: one of an index matching material and a lensing material (5) encompassing the at least one LED (Figure 5).

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3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harbers (US 6,586,882 B1), Bowman et al. (US 2003/0076051 A1) and Guy (US 2005/0207177 A1), and further in view of West et al. (US 2004/0141336 A1).

Regarding claim 8, Harbers, Bowman et al., and Guy do not disclose expressly the reflector being comprised of a reflective metal.

West et al. teaches a light guide including a reflector comprised of a reflective metal.

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to have modified the invention of Harbers, Bowman et al., and Guy such that reflector comprised a reflective metal as taught by West et al. since metal is known as a highly efficient reflective material.

Regarding claim 23, the recitation "A modular adaptable LED lighting system (10) comprising:" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Further regarding claim 23, Harbers teaches a screw base module (7; Figure 1); at least two light modules (2 and 1,3) having different light emission characteristics,

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each light module including: a platform (portion upon which the LEDs rest) which is adapted for mating with the base module (Figure 1), and at least one LED (2) disposed on the platform for generating light in a range from UV to infrared wavelengths (Abstract); an enclosure (5), which surrounds the light produced by the light module such that at least a portion of the light is transmitted through the enclosure; and a power module for energizing the at least one LED (necessary to cause the illumination effects described in the Abstract).

4. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harbers (US 6,586,882 B1) and Bowman et al. (US 2003/0076051 A1) and further in view Teixeira et al. (US 2005/0135105 A1).

Regarding claim 15, Harbers and Bowman et al. do not disclose expressly the heat sink comprising a slug inserted into the base for conducting the thermal energy from the at least one LED to at least one of the base and ambient air.

Teixeira et al. teaches a slug (116; Figure 2) inserted into a base (570; Figure 10A) for conducting the thermal energy from the at least one LED to at least one of the base and ambient air (paragraph 29).

5. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harbers (US 6,586,882 B1), Bowman et al. (US 2003/0076051 A1), Teixeira et al. (US 2005/0135105 A1) and further in view of Martin et al. (US 2005/0111234 A1).

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Regarding claim 16, Harbers, Bowman et al., and Teixeira et al. do not disclose expressly a plurality of fins disposed in one of a radial and a cylindrical tube longitudinal design about an outer periphery.

Martin et al. teach a LED lamp including a plurality of fins disposed in one of a radial and a cylindrical tube longitudinal design about an outer periphery (Figures 4A-4C).

At the time the invention was made it would have been obvious to one of ordinary skill in the art to have modified the invention of Harbers, Bowman et al., and Teixeira et al. such that a plurality of fins disposed in one of a radial and a cylindrical tube longitudinal design about an outer periphery were provided as taught by Martin et al. for the purpose of increasing the cooling effect and avoiding damage to the lighting components.

6. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harbers (US 6,586,882 B1) and Bowman et al. (US 2003/0076051 A1) and further in view of Martin et al. (US 2005/0111234 A1).

Regarding claim 17, Harbers and Bowman et al. do not disclose expressly the heat sink (26) extending radially from the base.

Martin et al. teaches the heat sink extending radially from the base.

At the time the invention was made it would have been obvious to one of ordinary skill in the art to have modified the invention of Harbers and Bowman et al. such that the

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heat sink extended radially from the base as taught by Martin et al. for the purpose of increasing the cooling effect and avoiding damage to the lighting components.

7. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harbers (US 6,586,882 B1) and Bowman et al. (US 2003/0076051 A1) and further in view of Allen (US 2004/0046510 A1).

Regarding claim 18, Harbers and Bowman et al. do not disclose expressly the conversion circuit comprising an AC to DC converter.

Allen teaches an LED lighting device comprising an AC to DC converter (paragraph 24).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to have modified the invention of Harbers and Bowman et al. such that an AC to DC converter was provided as taught by Allen such that the proper wiring was provided.

8. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harbers (US 6,586,882 B1) and Bowman et al. (US 2003/0076051 A1) and further in view of Farmer et al. (US 2005/0151708 A1).

Regarding claim 19, Harbers and Bowman et al. do not disclose expressly a metal clad, FR4, and CEM-1 printed circuit board hosting the at least one LED.

Farmer et al. teaches a metal clad, FR4, and CEM-1 printed circuit board hosting the at least one LED (paragraph 38).

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At the time the invention was made, it would have been obvious to one of ordinary skill in the art to have modified the invention of Harbers and Bowman et al. such that a metal clad, FR4, and CEM-1 printed circuit board hosting the at least one LED was provided as taught by Farmer et al. since these are well known bases for LEDs.

9. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harbers (US 6,586,882 B1) in view of Bowman et al. (US 2003/0076051 A1) and further in view of Malcomson (US 5,984,496 A).

Regarding claim 21, Harbers and Bowman et al. do not disclose expressly the enclosure comprising a light diffusing coating.

Malcomson teaches a light bulb including a light diffusing coating (col. 6, claim 11).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to have modified the invention of Harbers and Bowman et al. such that the light bulb included a light diffusing coating as taught by Malcomson for the purpose of creating a more uniform light output.

10. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harbers (US 6,586,882 B1) and Bowman et al. (US 2003/0076051 A1) and further in view of Strobl (US 6,356,700 B1).

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Regarding claim 22, Harbers and Bowman et al. do not disclose expressly the use of an index matching fluid.

Strobl teaches an efficient light engine including the use of an index matching fluid.

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to have modified the invention of Harbers and Bowman et al. such that an index matching fluid as taught by Strobl was utilized between the light engine and the enclosure such that light interference was avoided and the desired optical effects were created.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Van Jijswick et al. (US 2008/0137360 A1) teaches a light bulb with a light guide that has the appearance of a filament.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Zettl whose telephone number is 571-272-6007.

The examiner can normally be reached on M-F 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandy O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MZ
/Mary Zettl/
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Primary Examiner, Art Unit 2875